

refractive index of the semiconductor layer varies in a layer direction continuously or in a stepwise manner, and

wherein another semiconductor layer is provided on a boundary plane between the semiconductor laser region and semiconductor layer, and the refractive index of the another semiconductor layer is approximately constant.

7. (Twice Amended) A semiconductor laser device with a spot-size converter according to claim 1, wherein the semiconductor laser device having a spot-size converter includes a further light waveguide region tat an opposite side of the semiconductor laser region facing to the semiconductor layer.

8. (Twice Amended) A semiconductor laser device with a spot-size converter according to claim 4, wherein the semiconductor laser device having a spot-size converter includes a further light waveguide region at an opposite side of the semiconductor laser region facing to the semiconductor layer.